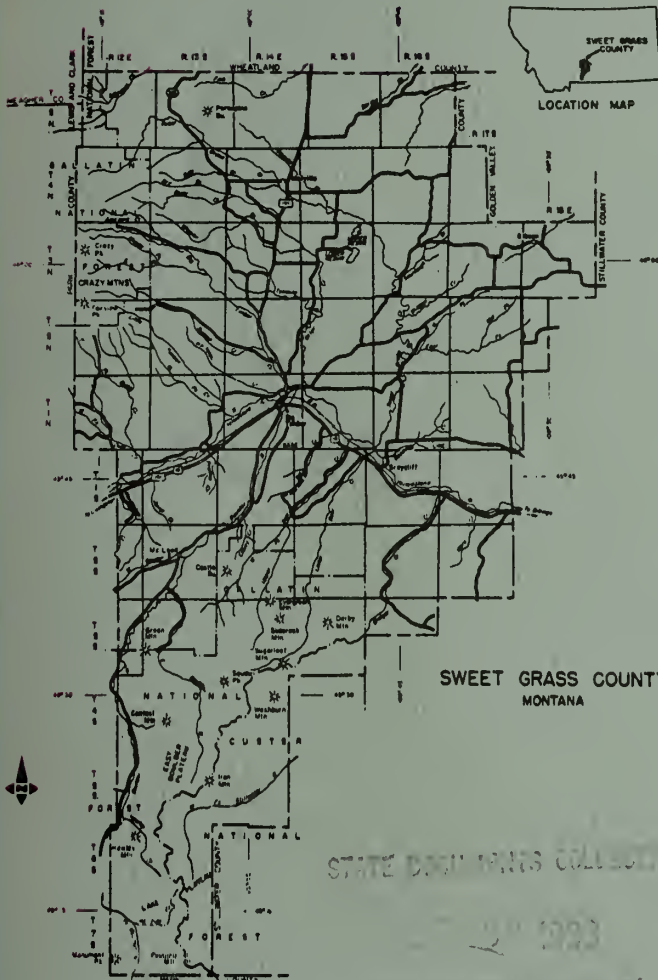


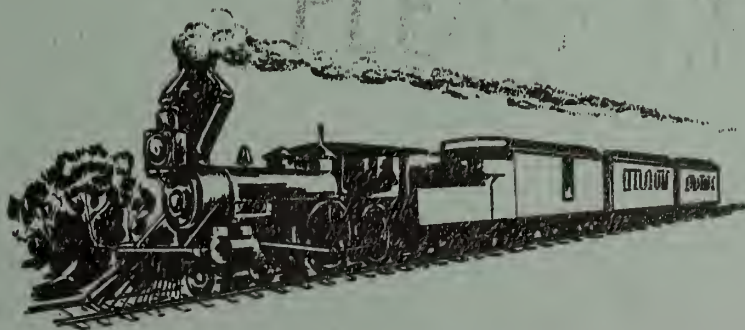
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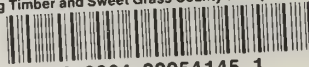
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BIG TIMBER AND SWEET GRASS COUNTY

TRANSPORTATION STUDY

Prepared for the Planning Boards

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TABLE OF CONTENTS

INTRODUCTION	Page 1
RECOMMENDATIONS.	Page 2
ROADS, STREETS AND TRAILS.	Page 6
City Streets	
Federal Highways	
U. S. Forest Service	
State Highways	
County Roads	
Private Roads	
BRIDGES.	Page 11
TRAVEL	Page 12
Bus	
Rail	
Air	
Water	
Other	
REGISTERED VEHICLES.	Page 17
IN-CITY PARKING.	Page 18
HAZARDS AND ACCIDENTS.	Page 19
City	
County	
ACKNOWLEDGMENTS.	Page 22
REFERENCES	Page 23
MAP.	Inside Back Cover

INTRODUCTION

Transportation in Big Timber and Sweet Grass County has followed an evolutionary pattern; contemporary systems involve travel on land, in the air and, to a certain extent, on the water. Quality (nature) as well as quantity (volume) of travel have undergone a steady metamorphosis in this area not unlike that of other locales. Transportation is a vital component not only for commerce and industry but also for recreation and pleasure.

In the course of this study, the planning staff has striven to compile all data and analyses germane to the transportation sector of society in Sweet Grass County. Rudimentary forms or systems of transportation have not been extensively discussed; the bulk of this study deals with the more developed aspects of the basic practice of getting from one place to another.

PLANNING STAFF TRANSPORTATION RECOMMENDATIONS

Big Timber

1. Fourth Avenue from McLeod Street west should be designated the high school bus route if a new high school is to be located on the proposed site adjacent to the athletic field.
2. The Montana Highway Department should be urged to make the corner of First Avenue and McLeod Street a four-way stop after Interstate 90 by-passes Big Timber.
3. The Town Pump gas station should move its diesel fuel pump to a location less in conflict with traffic safety.
4. Stop signs should be placed on all streets, except McLeod Street, as they cross Fourth Avenue.
5. A paved municipal parking lot should be designed for the central business district area of Big Timber.
6. Further study should be made concerning specific parking problems and solutions in the central business district area of Big Timber.
7. Pickup trucks and automobiles only should be permitted to park on McLeod Street between First and Fourth Avenues.
8. No semi-truck parking should be permitted on First Avenue within one block of McLeod Street.
9. U. S. Highway 191 should intersect U. S. Highway 10 at a right angle.
10. All new streets added through new development and/or annexation should be integrated into the present city street system.
11. It should be insured that all sidewalks in Big Timber are kept in satisfactory condition and good repair from weather deterioration and general delapidation. Loose material, such as sand and gravel, should be swept and kept off to help prevent falls by pedestrians.
12. The present 35 miles per hour speed limit on U. S. Highway 10 on the eastern and western edges of Big Timber should be reduced back to 25 miles per hour when Interstate 90 by-passes Big Timber.
13. Any new work done on sidewalk curbs, especially in the downtown area, should provide for cutaway curbing.

Strict provisions should be made to prevent the travel of semi-trucks through the residential area of the city, except for delivery and other business transactions.

County

1. U. S. Highway 191 north of Big Timber should be widened to 24 feet.
2. The Main Boulder Road from the Forest Service Boundary south should be improved with gravel.
3. Construction of Interstate 90 in Sweet Grass County should be urged to be speeded up.
4. Sweet Grass County should coordinate with the Forest Service to get more circuit traffic systems (non-dead ends).
5. A provision should be promoted that encourages the design of a bikeway and a walkway system within five miles of Big Timber.
6. When the demand occurs, consideration should be given to improving the road from the Rapstad School to the Voges Bridge on the north side of the Yellowstone River for general traffic use.
7. The Boulder Road from Big Timber to the Forest Service Boundary should be changed to come under maintenance by the State Highway Department.
8. The transportation element of the County Comprehensive Plan should include a list of county road improvement priorities for the following 20 years.
9. If the Independence-Cooke City road right-of-way is adjudicated to be under the jurisdiction of the counties, a joint feasibility study should be conducted by Sweet Grass and Park Counties to determine the best development or non-development alternative for a road through the corridor.
10. If mining development proceeds in the Stillwater Complex region of Sweet Grass County, a study should be conducted to identify the best alternatives for the development of a transportation system to and from the area that is socio-physically environmentally compatible with the county goals and objectives.
11. Further investigation should be made into the allowance of any 16- to 18-foot wide vehicle or towed unit travelling on U. S. Highway 191 between Big Timber and the Wheatland County line.
12. Sweet Grass County should cooperate with state and federal efforts to develop special regional public transportation systems and/or programs designed to benefit senior citizens and those with physical disabilities.
13. The development or adaptation of some proposed or existing Forest Service trails for access by the physically handicapped should be encouraged.
14. A 21-foot wide, gravelled and improved county road to serve as a (county) regional collector road should be developed from Big Timber to the north-east portion of Sweet Grass County. The present road designated FAS 478

may best serve this purpose.

15. Renovation of the Voges and Grey Cliff Bridges, across the Yellowstone River, at least to the extent of redecking, should be undertaken as soon as is feasible.

ROADS, STREETS AND TRAILS

This section will cover the information dealing with the streets of Big Timber, federal and state highways within Sweet Grass County, roads under the jurisdiction of Sweet Grass County, Forest Service roads and trails, and private roads. Current quantitative and qualitative data, as well as anticipated future systems, additions or modifications, will be covered.

City Streets

Approximately 15 miles of city streets transect Big Timber in a grid pattern (this includes nearly a mile and a half of U. S. highway that runs through the city). A majority of these streets are blacktopped, but a few, mostly near the fringes of the city limits, are gravelled. In general, the condition of Big Timber's streets is quite good with only a few chuckholes or other surface problems being evident. Many of these chuckholes have recently been repaired.

Table 1 and Figure 1 depict what the planning staff feels is the classification of the components of the street system in Big Timber.

TABLE 1

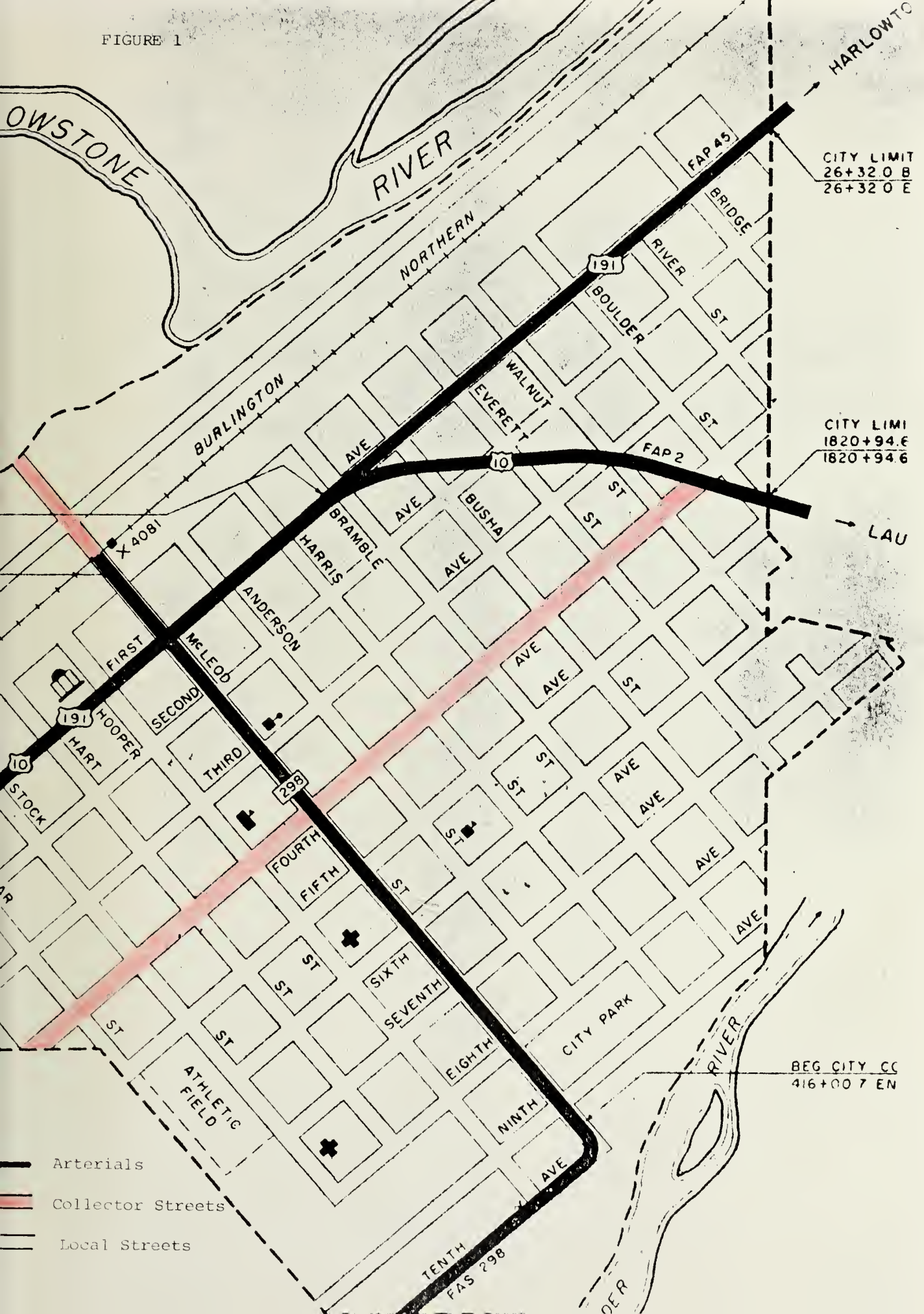
Street	Classification
1st Avenue (U.S. #10 and #191)	Primary Arterial
McLeod Street	Community Arterial
4th Avenue	Collector Street
All other streets and avenues	Local Street

In addition, when the proposed interstate, I-90, is completed and bypasses Big Timber, the classification of 1st Avenue may change. If it does, it would become considered a collector street.

No official traffic count on Big Timber streets has been conducted by the city. However, the State of Montana monitors the volume of traffic flow at a number of locations in Sweet Grass County on state and federal highways, including several points on 1st Avenue and one point on 10th Avenue on the edge of Big Timber. The data from these gaugings is presented in Figure 2.

Future construction of streets in Big Timber no doubt will continue, but exactly where and when it will occur is difficult to ascertain at this time. Areas of new home building and subdivisions will be major requirers of streets, and presently most new homes are being built on the south and east sides of Big Timber.

FIGURE 1



Federal Highways

Of the nearly 65 miles of federal highways in Sweet Grass County, approximately 13 miles are a recently-completed section of the four-lane Interstate 90. The remaining portions are two-lane U. S. Highways 10 and 191.

The condition of the various segments of federal highways varies from the very good interstate highway to the considerably narrower and/or "slippery when wet" stretches of highway. These hazards will be discussed in "Hazards and Accidents."

Figure 2 depicts the volume of traffic at various points on federal highways in Sweet Grass County during 1976.

The only segments presently scheduled for construction within the federal highway system is 10.8 miles of interstate highway from near Big Timber to just east of Grey Cliff, and 13.478 miles from the western edge of Sweet Grass County to near Big Timber. The firm, permanent dates for the letting of these contracts have not yet been set. In addition, improvement of U. S. 191 north of Big Timber is slated for the near future.

U. S. Forest Service Roads and Trails

(Note: Information contained in this section was obtained from the Big Timber Ranger District of the Gallatin National Forest. The jurisdiction of this district extends into Park County somewhat, so some of the data presented, especially that dealing with trails, will cover transportation systems in Park County as well. The data for the two counties within the district was virtually inextricable.)

All of the approximately 40 miles of designated Forest Service roads within Sweet Grass County are gravel or dirt-surfaced. Condition of these roads vary; some are "gumbo"¹ based and become easily muddied and rutted while other roads are built on solid rock outcroppings. Maintenance of these roads is difficult due to the limited funds and number of personnel for the work, and due to access hardships on many of the roads.

Between May 1 and October 31 of 1975, it was estimated that 43,200 vehicles travelled on the roads of the Big Timber Ranger District. This 6-month period is by far the busiest season for vehicle travel in the National Forest. More recent statistics have not been fully compiled, but they seem to indicate a steady increase in the volume of traffic on Forest Service roads in all seasons.

Most of the trails on the Big Timber District, except the 22 miles of designated snowmobile trails (nearly all of which lie outside Sweet Grass County), are closed to motorized vehicle use either by law or by the mere nature of the trails. Motorcycles are permitted on a number of the trails in the Boulder River drainage, however.

Not all of the 335 miles of designated trails on the Big Timber Ranger District are maintained and of those that are, some are not able to be maintained annually due to budgetary restrictions. Considering the purpose for which the trails were designed, the condition of most of the more extensively-used trails is quite good.

The Forest Service estimates that in 1975 there were 13,200 visitor-days of use on the trail system of the Big Timber Ranger District. A visitor-day is described as use of the recreation resource of the National Forest² by one person for one 12-hour period. Indications seem to point to the fact that use of this mode of transportation is also on the increase from year to year.

Plans for future construction of trails, at least in the Sweet Grass County part of the National Forest, is minimal at this time. A road

¹"Gumbo" refers to those soils that are approximately 80% or more clay in composition.

²Forest Service Recreation Information Management Handbook 2309.11,
p. 124.11--2.

Designed for timber products extraction is slated for the Lower Deer Creek area from Section 5 of Township 2 South, Range 15 East, to Section 10 of Township 3 South, Range 14 East. The contract for construction has been let and this approximately 12-mile long road has already begun to be built.

State Highways

When Interstate Highway 90 is completed through Sweet Grass County, approximately 24 miles of "frontage" road, formerly the 2-lane U.S. highway, will become state highway. This will be added to the present 20 miles of "frontage" road now designated as state highway along I-90. There are also 37 miles of secondary state roads in Sweet Grass County: 28 miles extend south of Big Timber up the Boulder River Valley, and the other 9 miles are from the community of Melville, which lies 20 miles north of Big Timber, westward.

The principal proposed work to be done by the State Highway Department in the realm of additions or upgrading of roads in their system involves a joint venture with Sweet Grass County to work on the Howie Road. This section is now a gravelled county road just north of and approximately parallel to the Yellowstone River east of Big Timber.

Due to an agreement with Sweet Grass County, there is some mileage of highways the maintenance of which has been exchanged between the county and the state, even though actual jurisdiction has not changed. Therefore, the condition of roads designated as state highways exhibit a variety of conditions.

Again, Figure 2 can be referred to for data concerning traffic volumes at a few locations on state highways during 1976.

County Roads

Not all of the nearly 460 miles of county roads are maintained by Sweet Grass County. However, failure to maintain or use a public roadway does not constitute a waiver of jurisdiction over the roadway.³ Of the roads that are maintained, condition and access generally are satisfactory, but a few, lower-priority areas present some problems in quality of transportation in the view of a number of local residents.

All but 26 miles of the county's roads are unpaved. Paving of the aforementioned Howie Road has been discussed as a possibility in the future. The present plan of the county road department calls for between 5 and 10 miles of road to be constructed or rebuilt each year.

³Legal opinion of Sweet Grass County Attorney Kenneth R. Olson given to the planning staff on 6/23/77.

Figure 2 shows the amount of daily traffic and several points on county roads in 1976.

Private Roads

There are practically an innumerable multitude of travelable roads under private ownership throughout the county. Exactly where one draws the line between a road and trail in the private sector can be based only on the type of use the route receives. For this reason, to classify all such non-public courses would be arbitrary and subject to inaccuracies. No inventory of mileage of private roads in the county exists.

Since each owner is responsible for the maintenance of his road(s), conditions vary widely based on the individual's ability and need for development. Few, if any, privately-owned roads in Sweet Grass County are paved.

The map illustrates under whose jurisdiction each route designated on the official state general highway map falls. The main controversy at this time concerns authority over the Main Boulder Road, south of the National Forest boundary, beginning in Section 26, Township 3 South, Range 12 East.

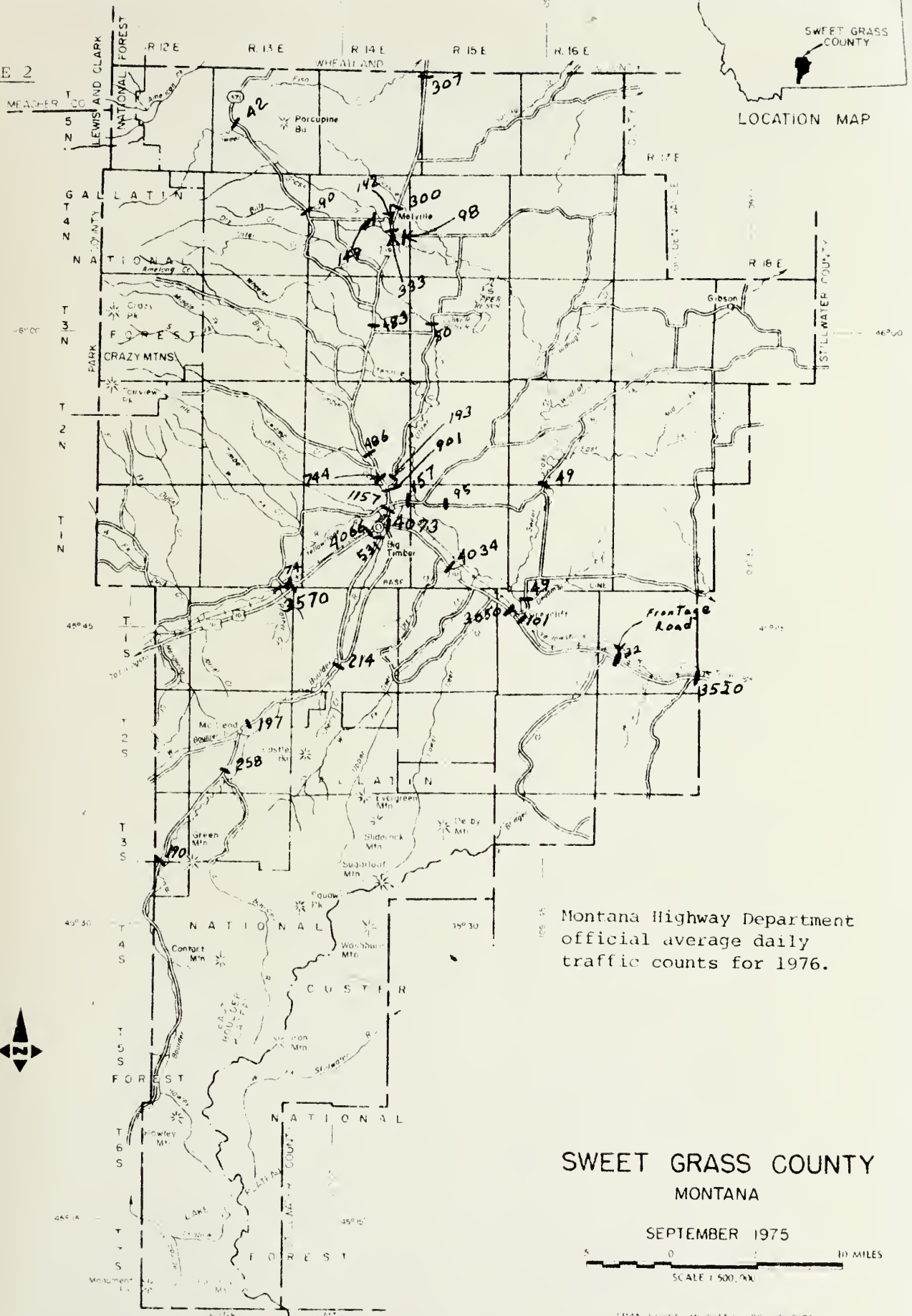
Table 2, below, illustrates the six classifications and the approximate mileage of each in Sweet Grass County.

TABLE 2

Classification	Mileage
Federal Highways	65
Forest Service Roads ⁴	40
Forest Service Trails ⁴	335
State Highways	57
County Roads	460
City Streets	15
Private Roads	?

⁴Big Timber Ranger District - includes parts of Park and Sweet Grass Counties.

FIGURE 2



BRIDGES

There are ten bridges on the Gallatin National Forest in Sweet Grass County that are on the inventory of bridges of the Big Timber Ranger District. Of these, at least two have been installed in the last five years.

Forest Service officials report that none of the bridges within their jurisdiction pose any significant hazards or problems of condition. Flash floods and abnormally high runoffs within the last five to ten years have been responsible for the destruction or damaging of several Forest Service bridges, all of which have been repaired or replaced, except one.

Within Sweet Grass County, outside the National Forest, officials have stated their conclusion that two bridges in particular are in need of repair. These two bridges, both of which cross the Yellowstone River, are known as the Voges Bridge (west of Big Timber) and the Grey Cliff Bridge (east of Big Timber). Redecking is planned for these bridges in the foreseeable future.

BUS TRAVEL⁵

There is no data available to the planning staff detailing either volume of passenger or freight traffic via the Greyhound Bus service in Big Timber, the only depot in the county. Three busses stop eastbound and three westbound during each 24-hour period at the depot, which is located on U. S. Highway 10 near the west end of Big Timber in conjunction with a service station. It has been recently moved there from near the center of the central business district, a location that did constitute a traffic hazard.

⁵See also the Big Timber and Sweet Grass County Facilities Study, III.K.5., p. 24.

RAIL TRAVEL⁶

The Burlington Northern Railroad, Inc., (BN), owns all of the railroad track in Sweet Grass County. The route traverses the county in the Yellowstone Valley just south of the river. Approximately 40 miles are covered by this track.

While the Amtrak passenger line still travels the track through the county, it no longer stops in Big Timber. Freight train stops are not scheduled in Big Timber; however, when patronage demands it, freight stops are made, either for pickup or delivery. In all, an average of 14 to 15 trains pass through Sweet Grass County daily.

All BN track in the county either has been replaced in the last three years or is scheduled to be replaced in the near future. Consequently, the condition of the rail transportation system in Sweet Grass County appears to be very good.

⁶Also see Big Timber and Sweet Grass County Facilities Study, Section III.K.5., pp. 23-24.

OTHER SURFACE TRANSPORTATION

Modes of transportation such as walking, horseback riding, cross-country skiing, and bicycling demand less of a formal system. Courses for these methods of travel can (and do) vary from interstate highways to virtually indiscernable paths. Popularity for these more "simple" means of travel has increased markedly in recent years, due both to the energy shortage and the public's change in tastes toward nostalgia, the simple life and physical fitness.

While the planning staff cannot analytically cover these forms of transportation, the staff feels that such means of travel ought not to be discouraged as valid means of getting from one place to another. On the contrary, they may well be the most desirable means under contemporary circumstances.

AIR TRAVEL⁷

Big Timber and Sweet Grass County have joint jurisdiction over the public airport just outside the city limits. In 1975, approximately 280 aircraft landed and/or took off at the Big Timber airport, and the following year the volume of traffic increased to nearly 360 aircraft. The trend seems to be for even more traffic in 1977 at the time of this writing (summer, 1977).

Eleven hangars house private airplanes at the 300-acre airport. Aircraft as large as Lear jets and DC-3's have been known to land on the 4,480-foot runway, these crafts are not recommended to use the airport except in instances of necessity, however.

In addition, there are a number of private landing strips located at diverse locations in the county. The strips are relatively undeveloped and are designed for single-engine planes. Helicopters, of course, are much more unlimited in the places they can land or take off.

⁷Also see the Big Timber and Sweet Grass County Facilities Study, Section III.K.1., pp. 22-23.

WATER TRAVEL

Two streams in the jurisdiction of Sweet Grass County are referred to as "rivers": the Yellowstone and the three branches of the Boulder. Neither river contributes significantly to the commercial segment of the community from a transportation standpoint. Irrigation and recreation are the two chief functions the rivers serve.

By and large, the Yellowstone River is considered to be a navigable waterway.⁸ As mentioned above, commercial, as well as industrial, transportation uses have been minimal in recent years. Recreational crafts are the principal users of the river and then only during the ice-free months. The annual summer Yellowstone River Boatfloat is the time of most concentrated use in this respect and the activity provides a considerable economic boon to the community.

Navigability of the main branch of the Boulder River has never been established, but may be in question in the future. It is a documented fact that the Main Boulder River has been used to float railroad ties from the mountains to Big Timber.⁹ In modern times, inner tubes have provided the means for people travelling on the stream. All other rivers and creeks in Sweet Grass County are even less navigable and do not significantly contribute to the community's transportation system.

⁸See Yellowstone River Valley Future Land Use and Policy Plan.

⁹The Big Timber Pioneer, January 26, 1967. Quoted in Jerkline to Jeep, by Ruth Staunton and Dorothy Keur. (The Times Clarion of Harlowton, Montana, 1975.) p. 32.

VEHICLES REGISTERED IN SWEET GRASS COUNTY

On May 18, 1977, the planning staff contacted the Sweet Grass County Treasurer's office and obtained the then-current statistics on registration of various types of self-propelled vehicles in the county. This data is presented below in Table 3. Table 4 shows the ownership rate for each type of vehicle in Sweet Grass County per person 18 years of age and older based on 1970 census figures.

TABLE 3

Vehicle Type	Number Registered
Automobiles (including jeeps)	1850
Trucks (including pickups)	1625
Motorcycles	210
Snowmobiles	56
Boats	28
Airplanes	10

TABLE 4

Vehicle Type	Number Per Person
Automobiles	.90
Trucks	.79
Automobiles and Trucks	1.69
Motorcycles	.10
Snowmobiles	.03
Boats	.01
Airplanes	.005

IN-CITY PARKING

Parallel parking is the prescribed method for vehicle parking on most streets in the city. Only on McLeod Street between the railroad tracks and 4th Avenue is angle-in parking permitted.

Between 1st and 3rd Avenues on McLeod Street (the core of the central business district) 80 angle-in spaces have been delineated. During regular business hours (approximately 8:30 a.m. to 5:30 p.m.) on weekdays, availability of parking spaces can become almost non-existent. Visibility by passenger vehicles moving out from the curb often is quite limited when large trucks and recreational vehicles also park along the curb. Snow and ice build-ups in the street adjacent to the curb also cause difficulty for many passenger cars pulling away from the curb since the gutter angle is about 12° in most places.

Only two bicycle racks, capable of accommodating about 14 bicycles each, are located at the corner of McLeod Street and 2nd Avenue. These are in addition to the racks on the grade school grounds. While they are rarely used to capacity, bicycles are frequently strewn along the sidewalk in the CBD. The use of bicycles by Big Timber residents of all ages has increased markedly in recent years during the summer months. Pedestrians and motor vehicles have had to exercise greater caution for bicyclers and inconveniently-parked bicycles.

HAZARDS AND ACCIDENTS

Locations of approximately 74% of the 129 accidents recorded by the Montana Highway Patrol in Big Timber and Sweet Grass County in 1976 are illustrated in Figures 3 and 4. Complete statistics on all vehicle accidents were unable to be compiled due to the incomplete data of local authorities, but sufficient information was available to establish some of the apparently hazardous sections of streets, roads and highways in the county.

There are a number of locations or areas on the street and highway systems of Big Timber and Sweet Grass County that the planning staff feels constitute a hazard of one type or another to transportation. The apparent problems of the city itself will be discussed first.

City

1. Semi-trucks parking along U. S. 10 in Big Timber.

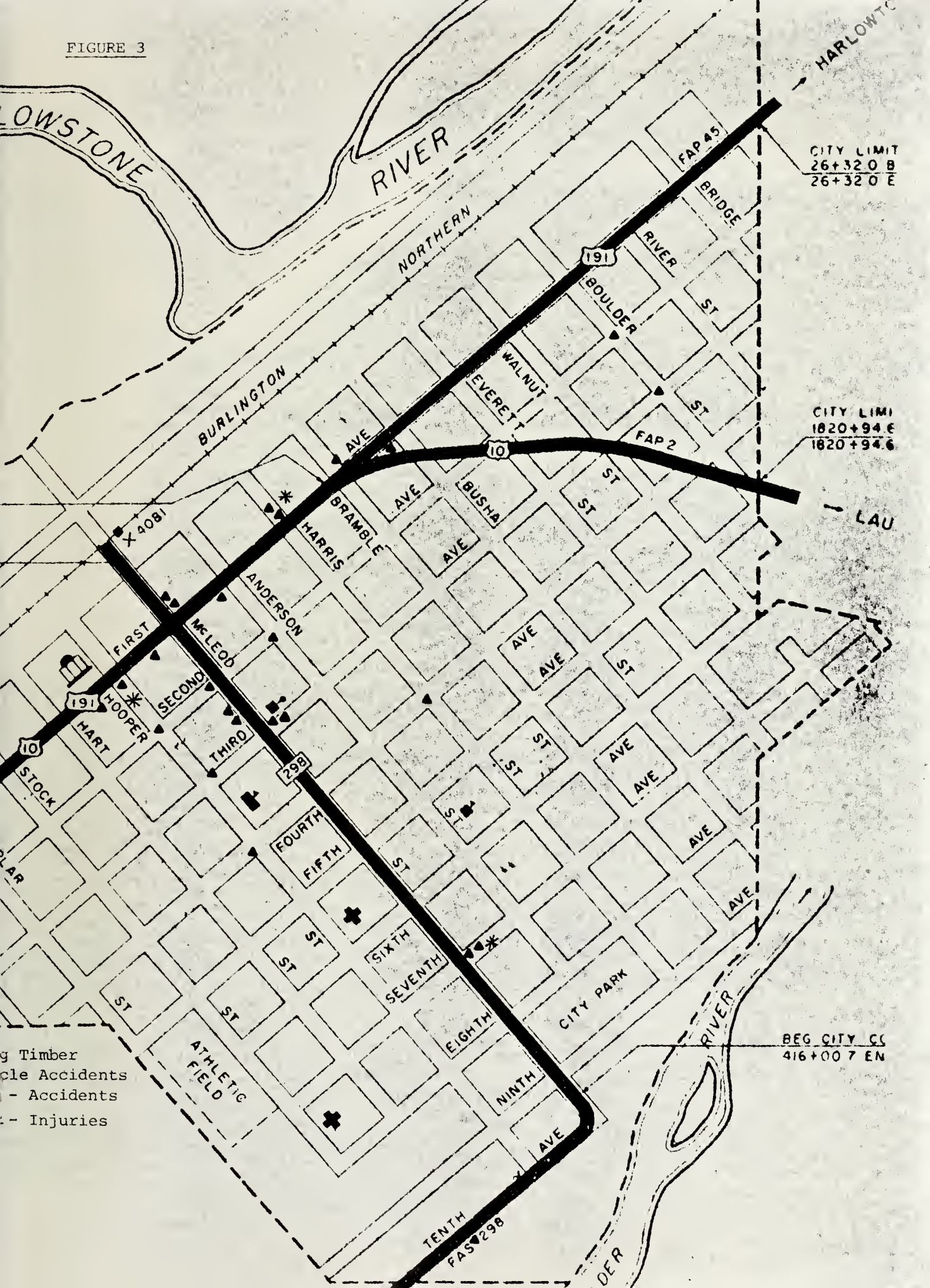
There are several points along Highway 10 within Big Timber where semi-trucks parallel park and cause serious problems from the standpoint of vision for automobile motorists. The block between McLeod and Hooper Streets in the past has been a frequent stopping place for semi-trucks and, particularly, when they park on the north side of the highway, vehicles crossing the highway on Hooper Street from the north (courthouse area) cannot see oncoming traffic from the east until they have entered the highway.

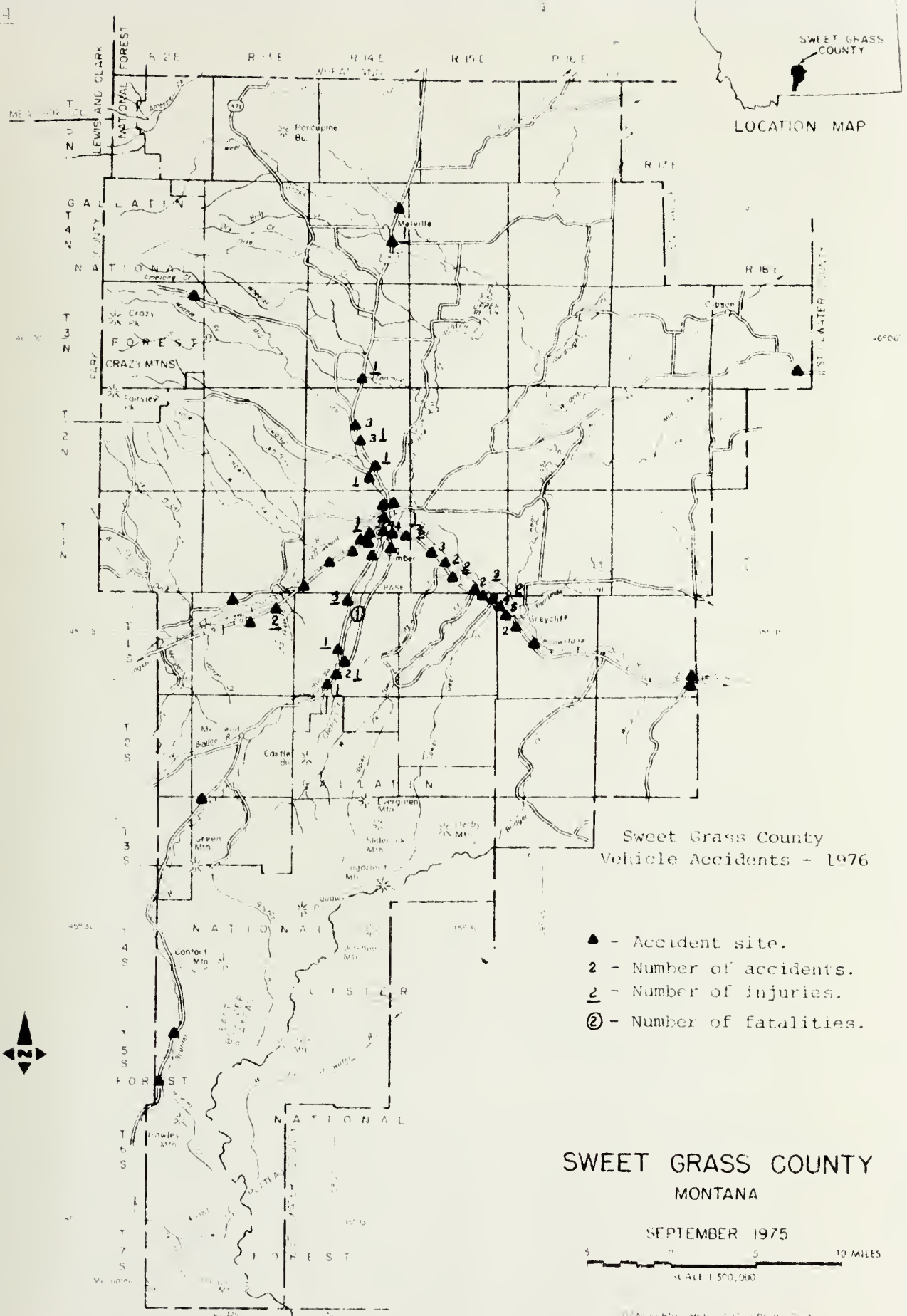
Two of the three gasoline stations on Highway 10 that provide diesel fuel have their facilities situated in such a way that when semi-trucks are refueling they cut off vision for automobile motorists as they enter the highway. In addition, the establishment located at the junction of U. S. Highways 10 and 191 is arranged so that trucks not only may restrict vision but also obstruct traffic, primarily on Highway 191 and on Busha Street. The third service station providing diesel fuel may constitute a transportation conflict with a proposed subdivision in the future.

2. Blind Corners.

Even though most developments on street corners within Big Timber apparently conform to the setback requirements of the city's zoning ordinance, a few locations have severely limited intersection visibility due to shrubs, hedges, trees, fences or structures. One such problem spot (the corner of Anderson Street and 2nd Avenue) has been at least partially rectified by the erection of stop signs on 2nd Avenue. However, most street intersections within the city do not have stop or yield signs and the corners with limited visibility are somewhat hazardous to drive through without coming to a full stop.

FIGURE 3





County

1. U. S. Highway 191 North.

The highway from Big Timber toward Harlowton is 20 feet wide on the pavement most of the way and there are numerous curves and hills. Ordinarily, this constitutes little problem; however, when exceptionally wide vehicles, such as 16- to 18-foot wide mobile homes, are hauled along the route, the possibility for safe two-way traffic becomes virtually eliminated. Several instances of such hazardous situations arising have been reported in 1977 alone.

2. U. S. Highways 191 and 10 West.

A seemingly high percentage of the vehicle accidents occurring on the highway west of Big Timber have happened during periods of rainy or snowy weather. Apparently, the surface of portions of this section of highway is unusually susceptible to being "slippery when wet."¹⁰

(Note: This problem, hopefully, will be eliminated at the completion of Interstate 90 through the area.)

3. U. S. Highway 10 East.

In addition to having areas of smooth highway surface that tend to become slippery when wet, like the areas west of Big Timber as mentioned above, much of U. S. Highway 10 between Big Timber and the Grey Cliff interchange, the present termination point of Interstate 90 nine miles east of Big Timber, is quite narrow with a number of deceptive curves and dips. Again, the forthcoming completion of interstate should eliminate this hazard.

It has been often surmised that a large percentage of the traffic accidents on U. S. Highway 10 in Sweet Grass County have been attributable, at least in part, to motorists' failure to adjust to the transition from divided highway to the two-way traffic roadway system which makes up a large portion of U. S. Highway 10 in Sweet Grass County. This stretch is the longest section of non-interstate highway along U. S. Highway 10 in Montana and, perhaps, between Minneapolis and Seattle.

Table 5, on the following page, provides a breakdown of accidents in the county by month in 1976 for the city and the county. No information is available on the seriousness of each incident since the local Sheriff's Office only retains the initial, pre-investigation reports on accidents.

¹⁰Personal communication with Sweet Grass County Sheriff K. G. Thompson, July 15, 1977.

TABLE 5

City		County
Jan.	0	3
Feb.	1	6
Mar.	5	7
Apr.	1	2
May	0	3
June	2	5
July	5	10
Aug.	2	12
Sept.	3	12
Oct.	5	11
Nov.	3	15
Dec.	4	7

A breakdown of reported vehicle accidents by day and night is presented in Table 6. Daytime hours are considered to be between 7 a.m. and 7 p.m.; nighttime hours are considered to be between 7 p.m. and 7 a.m.

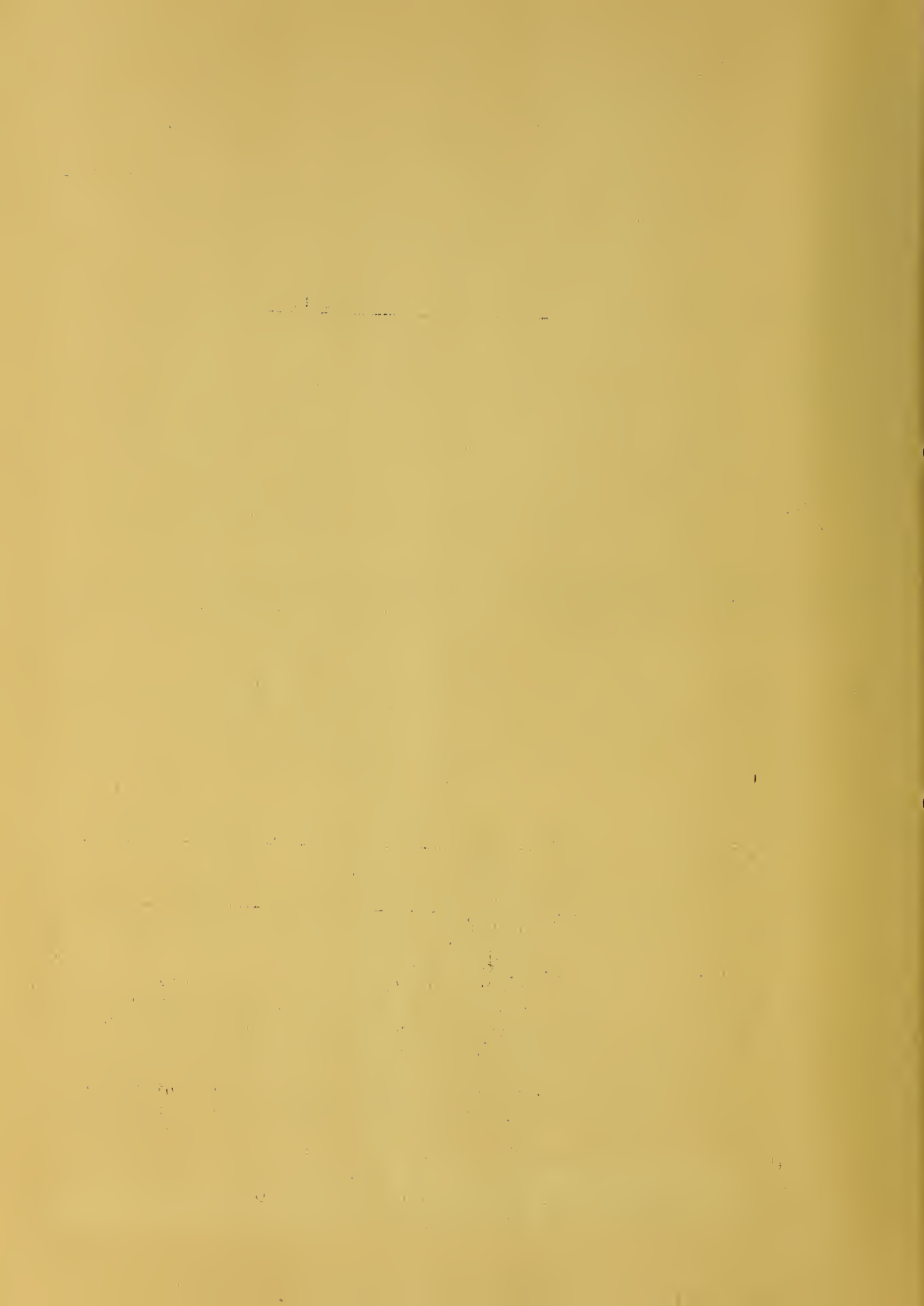
TABLE 6

Daytime Accidents	Nighttime Accidents
78	42

Officials of the Sweet Grass County Sheriff's Office estimated between 10 and 20 additional accident reports may have been received by the Sheriff in his home in 1976 during hours that the office was not opened. Of course, there were probably a number of unreported minor accidents that could not be included in the data of this study.

There were 71 personal injuries and one fatality in vehicle mishaps in 1976 within the county, according to the "1976 Annual Report" of the Montana Highway Patrol. Over the past 42 years, an average of three traffic deaths annually have taken place in Sweet Grass County.¹¹ A partial illustration of where the injuries occurred is shown in Figures 3 and 4. Again, complete statistics are unavailable, but sufficient data is able to be presented that hazardous areas can be identified.

¹¹"1976 Annual Report," Montana Highway Patrol.



ACKNOWLEDGMENTS

The planning staff wishes to express its hearty appreciation to these people for their help in gathering and assembling the information in this study:

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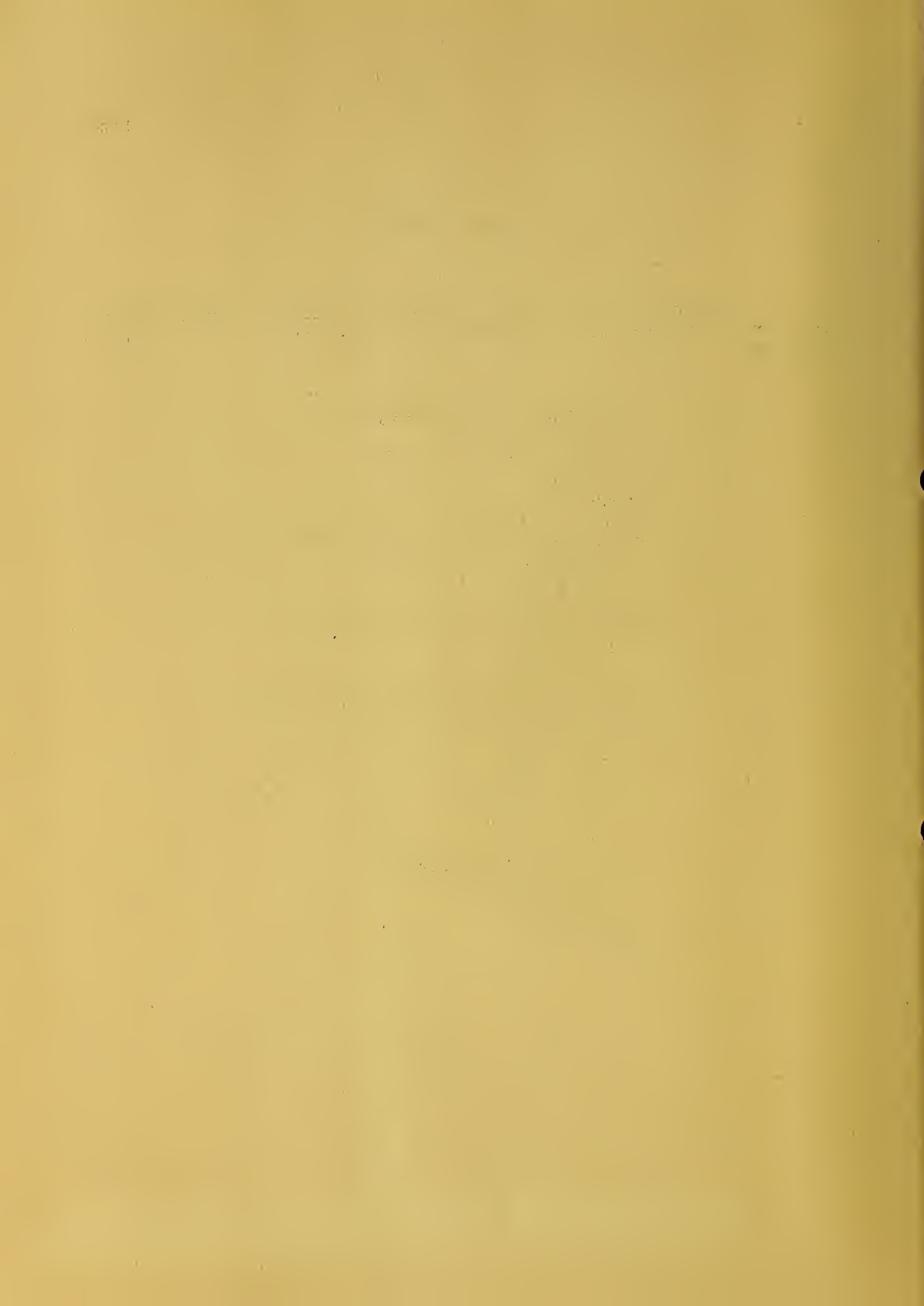
Soil Conservation Service

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